

Hatchery

1. Hatchery is a facility designed for fish breeding & incubation where fish eggs are incubated and hatched out in to hatchlings and maintained till spawn stage.

2. The hatching system has transformed from traditional hapa to modern hatching jars to circular hatchery (eco-hatchery).

3. The hapa system is highly laborious, require large area, subject to environmental hazards and success rate is low compared to circular hatchery system.

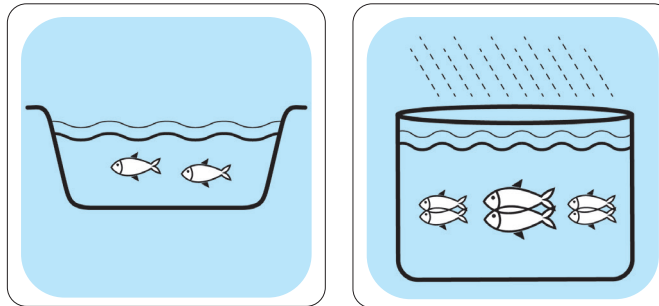
Circular Hatchery

- This system is now proved to be highly successful carp seed production and is adopted widely.
- The duration of one cycle of operation for hatching is 4-5 days.
- Hatchery is the vital component in a fish seed production farm.

Hatchery Components

Brood Fish Pond

Brood stock tanks are used for managing brood stock for about 4-5 months prior to Breeding by following standard operational procedure(SOP).



Breeding Tank

- Concrete circular tank(RCC)- Size of one breeding pool is 5.2m dia (inner wall).
- The inside depth at the periphery is 1.20 m which slopes down to the centre at 1.50 m.
- Water supply line is laid along the outside of the wall and the inlet to the pond is provided at 14 -16 places equally spaced and fitted 1.5- 2 ft above the bottom of side wall at an angle of 45° to the radius of the tank.

- The water flows in the breeding pool create an artificial riverine condition for the fish to breed.
- In the out let fitted at the centre, on opening the valve, fertilized eggs along with water are transferred into incubation tank for hatching.
- At the top few pipes are provided with shower to create rainy condition.
- Breeding pools located at elevated place than the hatching unit.

Hatching/ Incubation Tank

- These are two layered circular concrete tanks of 1 cm height with inlet and outlet and duck mouth openings at the tank bottom for water circulation.
- The outer chamber is 3.6 m in diameter having an outer masonry / concrete wall.
- Another circular wall with a fixed nylon screen is provided at 0.76 m clear distance from the outer wall.
- The center of the inner chamber is provided with a 3 inch outlet where a 3 inch PVC stand pipe of height 100 cm has to be fixed for taking out excess of water of the incubation tank.
- Inlets are fitted in the floor of the incubation pond with each outlet having duck mouth opening fixed at an angle of 45° towards inner wall.
- All the inlets are fixed in one direction only so as to allow water circulation in between two rings.



Hatchery Components

Spawn Receiving/ Collection Chambers/ Tank

- This is a rectangular masonry concrete tank with cloth hapas fixed inside connected to hatching pools.
- This is located at a lower elevation than the incubation pond, so as to drain out the water from it by gravity.
- Hooks are fixed in two opposite side walls of the pond for fixing the hapa/ net for the collection of spawn.

Overhead Water Storage Tank

- The overhead tank is used to supply sufficient water for the spawning, incubation and storage tanks.
- The floor of the tank should be 4-5 m above ground level.
- Water supply to the overhead tank should be arranged by pumping water from reliable, quality water. Iron free water tube well is preferred source.
- 3 tons/ 30000 lts capacity

Conditioning Tank

Concrete tank with water supply and hooks on the sides to tie hapa/net for conditioning spawn/fry before packing for transportation.

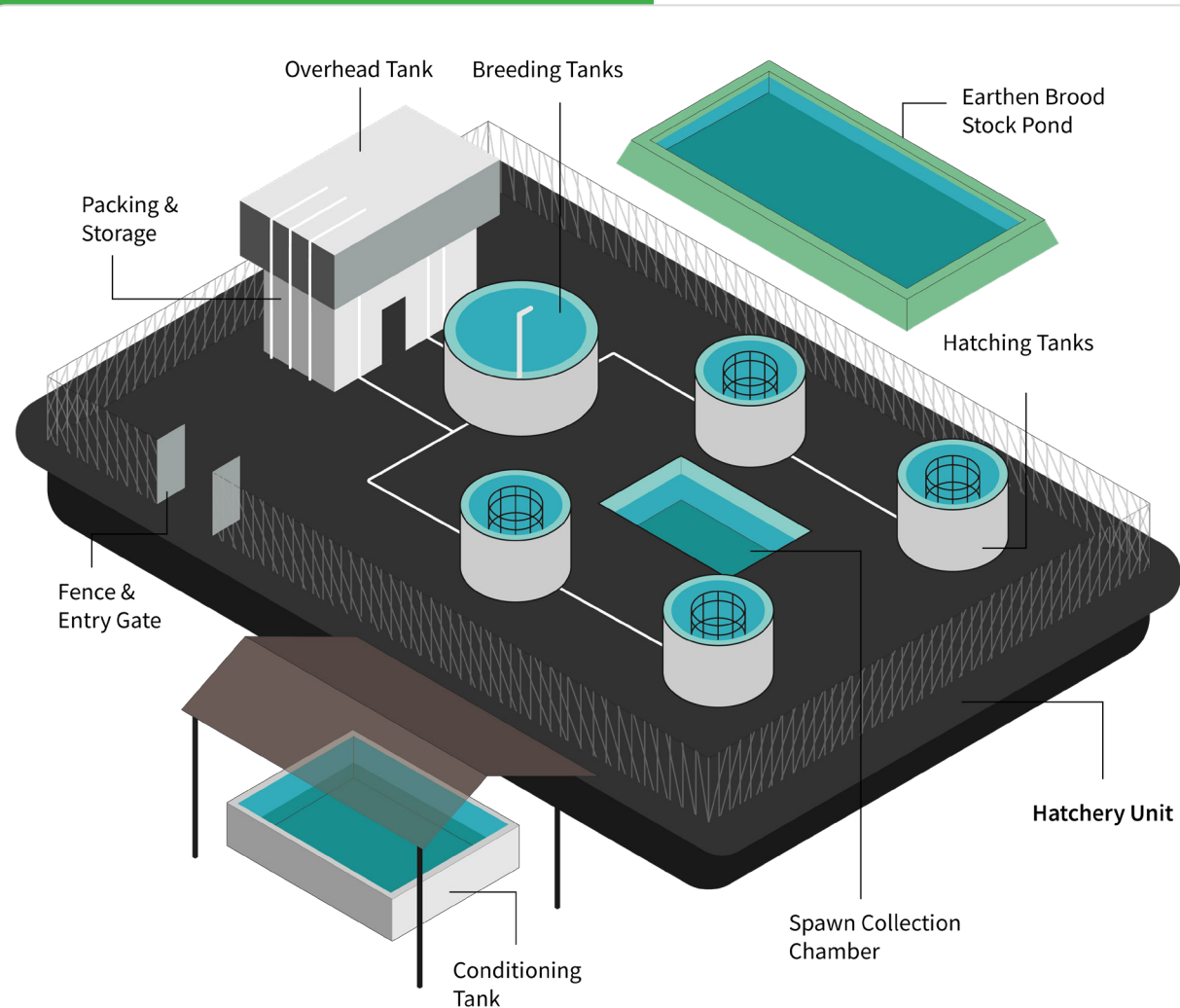
Store/ Packing Shed/ Store Room

Suggested size: 50 x 30 ft near the conditioning tank to store materials and packing the seed.

Power Source & Power Backup Security Fencing with a Gate

Facilitate power source with backup for uninterrupted operation.

Provide fencing around the perimeter for security.



Note: Following schematic shows a hatchery facility with a production capacity of 10 million fry.